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# An Essay on Kine Pock

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Ovid.

+ Inoculation, was not I believe, practised in Europe, before the return of the celebrated Lady Mary Wortley Montague, from Constantinople about the year 1720.—— The favours lavished upon the elder Dimsdale by the munificent Catharine the second, furnish a painted example of the value attached to it.

# Introduction.

The subject of the ensuing essay, early solicited my attention. My opportunities of witnessing the disease, of which it treats, have been numerous; & the experience of each succeeding day, served to make its importance more manifest. Previously to the discovery of this wonderful Prophylactic, the Small Pox was one of the broadest avenues, to the grave: it is already, divested of almost all its terrors; & it is presumable, that in a short time, it will be known only by name, among us.

To appreciate properly, the advantages, we reap from the time Pock, it is necessary to be acquainted with the extent, of the mortality, induced by the Small Pox. In the City of London alone, the number of deaths from it was truly alarming. Even Inoculation, was found to be inadequate, to arrest its ravages. So far, indeed was this from being the case, that Baron Dimsdale, has proved by calculations, of unquestionable accuracy, that its victims have been more numerous, since the general practice of ~~Inoculation~~, than before its introduction! Very few of the physicians in Europe, & none in this country, of any pretensions to character, continue to practice Inoculation. The superiority of Vaccination, is so very obvious, that I am astonished, that any should prefer inoculation — the following are its principle advantages.

1st. It is admissible at all seasons & ages. I have known it performed a few hours after birth.

2d. Neither medicines nor confinement are necessary, in 99 cases out of 100.

3 It is by no means a painful, & very seldom, a dangerous disease. Only one, well authenticated case can be adduced of its fatality; which occurred to Dr

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4 It never produces deformity. & 5 Is a more certain preventive, than Small Pox.

The reverse of all this is true with regard to Small Pox.

The mass of evidence that has been brought forward, to prove its benign operation, has almost silenced opposition. Some few however still continue, to express their hostility to it. Among whom, a certain Smyth, has rendered himself conspicuous, for hardihood of assertion, & virulence of abuse. Little better could be expected, from the author of "A tour in America." Several others, have blazed for a moment in their transit to oblivion. But I was very much chagrined, to observe, that Dr. Moseley, who is equally celebrated for acute investigations, & profound erudition, should suffer his name, to be inscribed on the list of its adversaries. Such however, is the fact, & we can only ascribe this derelictions, from his accustomed correctness, to that eccentricity, which sometimes unites to genius.-

It seems that the disease, of which I am now about to treat, has been familiar, for a long time, to the farmers & graziers of England. They observed that a certain species of sores, that occasionally appears, upon the hands & arms of milkers, prevented their taking the Small Pox. It seem to me very singular, that this important fact should have been permitted, to lie dormant so long; and that some one, to whom it was familiar, did not suggest a proper application of it. This was reserved for Dr. Jenner; to whom it has proved a source of opulence & reputation, he perhaps but little anticipated. He proved that matter taken from these ulcers, on the udders of cows, was fully competent, to secure the Human constitution, from the destructive operation of the Small Pox. I have previously stated, that this celebrated physician, has no pretensions to the discovery, of the Vaccine disease: it is far from my intention, to detract from the celebrity, he has so justly acquired. much is

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is certainly due, to the ingenuity, perseverance, & intrepidity, which he evinced, in developing, illustrating and maintaining it, in opposition to a host of adversaries. He was doubtless aware, of the obloquy, that would attach to his character, from a failure. He would, probably have been ridiculed, for his credulity, by those very persons, who are now most clamorous, in his praise. Doctr. Jenner, however, is not the only one, entitled to our thanks for braving the consequences of a failure. Professor Coxe displayed equal boldness. He for a long time stood alone, and opposed & ultimately vanquished, by facts and experiments, the prejudices & scepticism of his Countrymen.

I am sensible that I ought to apologize for the very imperfect state, in which I venture to exhibit this, my first attempt at compositions. It might very reasonably be expected, that I should endeavour to confirm, by experiments, the opinion I have ventured to suggest. Such was my intention; but I found upon investigation, that, several which I had contemplated were already before the Public. — Unfortunately, I could not experiment upon myself; since it very rarely happens, that this disease, can be induced twice, in the same person; & the impropriety of involving the health, perhaps the existence, of others, in experiments, the issue of which could not be foretold with certainty, was too forcible to be withstood. I was particularly anxious to confirm or disprove the experiments of Doctor Carpenter of Lancaster, upon the cow. The difficulty of making the attempt, must be my excuse, for its omissions. It will be perceived that, I have assumed the fact as correct; as far as I know there is no reason to doubt his relation; it accords, very completely with the view of the disease, that I have ventured to take, & is in other respects strictly consonant to probability.

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If future investigations shall shew, that the opinion I have adopted is incorrect, I shall cheerfully renounce it. I am very far from being wedded, to this, or any other opinion. My sole object is the attainment of truth: & I shall esteem myself particularly obliged to any one, who will point out my deviations from it. I have endeavoured, to deal candidly, & impartially, with those opinions, which I have had occasion to touch upon. If I have, inadvertently, neglected to do this, it must be imputed to omission, & not to intention.

My youth & inexperience, precluded deep research; superadded to which, the extreme shortness of the time, unavoidably allotted to the preparation of this essay, in the midst of pursuits more immediately interesting, has contributed to render it extremely crude & imperfect.

Such as it is — "with all its imperfections on its head"; I submit it — to Clemency rather than Justice. —

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# An Essay &c.

The origin of Cow Pock is involved in considerable obscurity. Dr. Jenner has given a very minute, & apparently, a very accurate account of it. I shall transcribe his words, they are as follows,

"There is a disease, to which the horse, from his stable & domestication, is frequently subject. The farriers have termed it the Grease. It is an inflammation and swelling of the heel, accompanied at its commencement, with small cracks or fissures, from which issues, a lymphatic fluid possessing properties of a very peculiar kind. This fluid seems capable of generating a disease in the human body (after it has undergone a modification I shall presently speak of) which bears so strong a resemblance to Small Pox, that I think it highly probable it may be the source of that disease."

In this County a great many cows are kept, and the office of milking is performed indiscriminately, by the men and maid servants. One of the former having been appointed to apply dressings to the heel of the horse affected with the malady, I have mentioned, & not paying due regard to cleanliness, inoculatively bears his part in milking the cows, with some part of the infectious matter still adhering to his fingers. When this is the case, it frequently happens, that the disease is communicated to the cows, and from the cows to the dairy maids, which spreads through the farm, until most of the cattle & domestics feel its unpleasant consequences."

Some have doubted the correctness of this opinion of Dr. Jenner. The following, are perhaps, the most prominent objections to it.

1st. "The matter of Grease will not secure the system, from the attack of Small Pox." It very rarely ulcerates, or even inflames, the hands of those employed in dressing the hoofs of horses, labouring under the affection which might reasonably be expected, if it were endowed with the contagious

See Cone's Practical Observations of Lime Rock page 13.

exclusively ascribed to it.

2d. Dr. Woodville has proved by experiment, as far as negative experiments, well go, that the vaccine disease, cannot be induced, in the heifer or cow, by inoculation with the matter of Grease. I am aware that a veterinary surgeon, is said to have actually succeeded, in producing this disease artificially, in a cow, by removing a scab from the teat, and applying the resultant, blackish matter of Grease to the abraded surface of the cow." This experiment, in my opinion, proves very little: attempts were doubtlessly made in every possible form, & succeeded only in one instance. It being the only experiment, upon record, should induce us to view it with caution and distrust. Neither do not take this trouble: the dry matter of Grease, is applied to the sound & unincised cuticle of a cow — it is known unnecessary to abrade the skin. and inflammation and pustules, are the consequences of forcibly rubbing the part, with which it is induced accidentally. when experiments are made for the express purpose, of settling the question: when the inoculation is performed by operators, of unquestionable skill, & every other precaution taken to insure success, one case only, can be adduced, of its accomplishment. It certainly behoves us to be extremely cautious, of granting our assent, to a single experiment, involving a result, of such magnitude, even if made, with every attention. Our laws deem every person innocent, until they are proved to be guilty. In like manner, it is most conformable to that circumspection which should govern our decisions, to take nothing for granted. This experiment seems to have been made by a veterinary surgeon, who perhaps does not bestow that care & attention upon it, that is essentially necessary, in investigations of this kind. Would it not be more reasonable to infer, that he has mistaken?

3. It is the only disease, produced in this circumstances manner.

4. The opinion, has been advanced by some that the Vaccine disease, is a modification of small Pox. Dr Adams, I believe, is of this number. I cannot view, mighty consideration, opposed the correctness of this opinion: (the

Dr. Woodville states that the vaccine is sometimes attended with eruption. I have seen one or two cases that may verify the remark. That the vaccine a constitutional disease, is proved by a fact, communicated to Dr. Jenner. Much, disease has continuance in Europe, by Dr. Jenner, viz. that scrald or any other sores, refuse to heal, as long as the system continues under the operation of the Kine Pock.

[illegible] of the [illegible] appear to be still more decisive.

I consider that the former, is in my opinion the most specious of the two.

The [illegible] facts and arguments, [illegible] be [illegible] supposed [illegible]

1st There is a strong resemblance in the external appearance, of the two diseases.

They attain their acme, about the 9th day; they are both, eruptive, & constitutional diseases.

2d They reciprocally prevent each other; tho there are some few exceptions, but as a general rule, it may be admitted.

3d They both may exist at the same time in the same constitution.

This opinion will scarcely be controverted. It must have occurred to every one whose experience with the Kine Pock has been at all considerable.

Several facts have occurred within the sphere of my own observation, that completely establish it. They are so decisive, that I must be pardoned for briefly mentioning them.

Captain C— was confined in the Gaol at Baltimore in August last. At this time, several criminals & runaway negroes, who were lodged in a room, immediately beneath the apartment he occupied, were ill with Small Pox. He was immediately vaccinated, with recent matter, and the operation happily succeeded in both arms. The pustules progressed so regularly, & every other appearance, continued so favourable, that sanguine hopes were entertained, of his exemption from Small Pox. About the 10th day, however, when the areola was inflated, he was seized with the eruptive fever. I was somewhat alarmed at his situation, as the weather was intensely warm, & he was standing by robust & athletic. I experienced at the same time, an ardent curiosity to witness the effect of this collision, upon the two diseases. He was bled & purged, & the usual remedies advised, to allay inordinate action. Very little alteration was perceptible, in the vaccine pustules, although I watched their progress, with the utmost solicitude. On the other hand, the influence of the vaccine upon the variolous disease, was too obvious to be overlooked. The crop of pustules, was very moderate, & the fever, after the eruption made its appearance, comparatively inconsiderable although, from the causes I have specified, I had apprehended a violent &

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I have already mentioned, that a ~~[illegible]~~ runaway negroes, were confined at the same time, a majority of whom, were still susceptible of small Pox. Of these, four or five inoculated the infection, naturally, they were vaccinated. The varioloid, appeared at various stages of the vaccine pustule; & in every instance, its violence was proportioned to the maturity of the [illegible] Pock. Thus when the small Pox supervened on the 5th day, from the insertion of the vaccine matter, it was accompanied with considerable fever, & other symptoms of an unpleasant nature; but when its accession was protracted, till the fifteenth day, as it was in one instance, the eruption, & fever, were extremely mild, & might have been mistaken by a careless examiner for Chicken Pox. The duration of the eruption, however, & other circumstances, sufficiently indicated its nature.

These cases appear to me, of considerable importance, inasmuch as they prove beyond controversy, that the two diseases, may exist at the same time, in the same constitution. Prof. Coxe furnishes an example of a similar nature.

A very weighty argument in favour of the identity of the two diseases, is derivable from the fact. Mr John Hunter long since, ~~[illegible]~~ the improbability of two actions of a different nature, existing simultaneously in the same part. Some of the laws of sensation, & of irritation, are bottomed on this axiom. Dr Rush very pleasantly remarks, that he could as readily conceive, that a horse could trot & walk at the same time, as that two actions of a different nature, could subsist together in the same part. Numerous facts might be adduced, to prove the correctness of this opinion. A case much in point, may be found in Duncan's Annals of Medicine, in which Syphilis was inoculated over a Scrofula. after the former subsided (& as my recollection serves me, I contracted the disease) the Scrofula resumed its wonted [illegible]. The plate of this case is also recorded in the Edinburgh Medical Museum

* The famous experiment of Mr John Hunter [illegible] the venereal gonorrhœa & syphilis, must be familiar to every one. It demonstrates the immense importance of a single experiment, judiciously conducted, fairly & impartially detailed, since the opinion of Mr Hunter was decisive enough to establish a question of Pathology, as warmly contested perhaps as any other.

† Vide Practical observations on the Cow Pock p.p. 14 + 15

[illegible] Jenner, [illegible] has [illegible]
produce the vaccine disease in a cow. The correctness of this statement;
is now questioned. It has been contended, that cows are insensible of the
contagion of the various viruses, & that if a sore was produced, it would
not exhibit the usual marks, that characterize Cow pock. A single
well attested experiment, is sufficient to establish the principle. (Sir Joseph
Hope very judiciously cautions us, "against drawing positive conclusions, from
negative experiments" He goes on to observe, "we have an all reasoning drawn
from them, however plausible, falls to the ground, by this single positive
fact" &c

5th There is a much greater resemblance, between Small pox & Kine pock,
than between Syphilis & Gonorrhoea, or between the last & Scabies. It is
possible, that Framboesia is a modification of Lues venerea; & there are
some reasons, for believing, that this last is an evanescent form of Leprosy.

6th A vaccine scab, taken from a person labouring under small
Pox, & the vaccine disease at the same time, will produce the former.
If it be true the disease will be considerably ameliorated, but it will remain
sufficiently well defined, to leave no doubt of its nature. This fact was
ascertained in Baltimore, during the last summer. Every particle of the
varicous matter was removed from the external surface of the
breast, & all other precautions taken, to obviate deceptions.

The above are the principle arguments, that occur to me at this
time. They evidently, in my opinion, preponderate the reasons that
have been urged in favour of Dr Jenner's hypothesis. The origin of the
vaccine disease, still remains doubtful, & I am by no means very sanguine,
that the opinion I have espoused is the true one. It seems to me
the most probable of any heretofore advanced, & I shall continue to
adhere to it, until Dr Jenner's if is more completely established, or until
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Various, plans have been suggested, for preserving the virus. As it was by some supposed, that the sensible qualities of the atmosphere, dis- -ished its activity, new exact instruments were devised, to exclude the air, & to preserve an uniformity of temperature. I have seen several of them; that served to answer the purpose very completely; but as far as I could judge, with very little advantage. It does not appear, that either heat, or moisture, unless excessive, exert any considerable influence upon the Vaccine Matter. It is now either preserved upon glass; or else is saturated with it. Dr. Rush prefers the point of a lancet. The principal objection to this is, the facility with which the point of the lancet is oxydated. When glass is used for this purpose, it is necessary to permit the virus to become perfectly dry, if this precaution be neglected, the fermentation process will be induced, which will destroy the activity of the virus. The scab is now generally preferred. It is more economical, continues to infect a longer time, than when either of the above modes is resorted to.

It is difficult to determine with any degree of precision, the length of time, the virus will continue to infect. The temperature at which it is kept, exerts the most considerable influence upon it. Good matter, in general, continues to produce the disease, in temperate weather, at the end of six months. Its activity seems to diminish in the ratio of its age. A great number of experiments, would be requisite to determine this point, with absolute certainty.

Vaccination, has been performed in several ways. The thread is much in vogue, until Mr. Boyce pointed out the superior efficacy of the scab. A very palpable objection might be urged against the employment of the thread. The presence of an extraneous body would inequivocally tend the parts to suppuration inflammation, whereby the Vaccine disease would be abolished. From the predominance of inflammation & suppuration, pus would be secreted, in lieu of that limpid fluid which is uniformly (present

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The fluid matter is exempt from this objection, & when practicable is perhaps superior, to any other mode. But the impossibility of obtaining it at all times is an insuperable impediment to the general adoption of this practice. Dr. Jenner has termed the 9th day, the sacred barrier, beyond which we shall never venture. Subsequent experience, has shewn the fallacy of this caution. It may be taken with equal propriety, on any day, so long as the matter continues fluid. Dr Rush has known it to continue fluid for 20 days.

Several years ago, Mr. Boyer recommended the scab. The almost universal adoption of this practice, is a sufficient test of its superiority. The generality of physicians depend upon a puncture. When the vaccinated lancet is used for this purpose, it should be thrust obliquely under it, which is sufficient to remain for a short time: if retracted immediately, the chance of communicating the disease, is much diminished. Dr. Rush very strongly, enjoins the observance of this precaution. From several experiments, made upon the upper, it is apparent that our success would be greatly enhanced, by attention to his direction.

I have found it advisable to expose a larger surface, to the action of the virus. To effect this, I usually make two or three parallel incisions, about the 8th of an inch in length, in an oblique direction, near the insertion of the deltoid muscle, with the shoulder of a lancet. Previous to the external coat of the scab, should be carefully pared off, this is an essential precaution, it is impossible to conceive, it has frequently occasioned a failure. A drop of water should then be carefully incorporated with the matter, & introduced into the incisions.

In females, it may be proper, to invert the matter, higher up the arm, that is over the belly of the deltoid. It might be apprehended, that the action of this muscle, would increase the inflammation very considerably; I have not observed it.

When a lancet is not at hand, a common sewing needle, is a very good substitute. All unnecessary irritation should be carefully avoided. —

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in the inoculation succeeds, a small red pimple, is generally observable on the 2 or 3 day: it continues to increase gradually, & on the 4th or 5th, a vesicle containing a limpid fluid, makes its appearance: on the 6th day, the areola or inflammation; on the 8 or 9th the areola commences, & continues till the 12 or 13th day, at which time it is about the size of a dollar; it now begins to lessen, & finally subsides about the 14 or 15th day. About the declension of the areola, the pustule begins to dry, & generally on the 19th day, sometimes much earlier, the scab is perfectly formed. The crust in most instances, falls off spontaneously, about the 20th day, but it may, commonly be detached much sooner.

The pruritus that supervenes about the 9th day, is sometimes truly distressing. It is occasionally so considerable as to require the exertion of great fortitude, to abstain from scratching. The constitutional disease, comes on about the same time, & is characterised by those symptoms, that denote a mild grade of fever. It is increased or diminished by all those circumstances that augment or lessen, the local affection.

When the inflammation is at its height, the glands of the axilla, are commonly tumified & tender — or when the matter has been absorbed into the leg, the inguinal glands, are enlarged and painful. This symptom, is by no means uniformly present. I have been unable to detect it, when every other symptom, accorded, exactly, with the description I have just given. Most writers have imputed this affection of the axilla, to the absorption of the vaccine virus; perhaps this opinion is in some instances, well founded; but it certainly does not, exclusively, & in every instance, depend upon the passage of the virus into the circulation.

In a majority of the cases, that have fallen under my notice, it appeared to arise from the intensity, of the inflammation surrounding the pustule. Any considerable irritation, as scratching, or rupturing the pustule will bring it on; it arises from this cause, as frequently

† Hectic Fever was formerly supposed to arise from the absorption of purulent matter. Few practitioners of the present day, entertain opinion.

‡ For a full and very accurate description, I must refer to Dr Practical Observations, page 18 et seq.

‡ The rapidity with which the fluid is secreted, is truly astonishing when it is used upon the exterior surface of the hustyle, & the adjacent skin, it is speedily solidified by evaporation. In this state it has the appearance of unbroken crystallization, & is of the colour of sugar candy. The celerity with which the aqueous humour is reaccumulated, is, by the operation for extracting the Crystalline lens, is well known.

& Dr Pennick mentions an appearance somewhat similar in the skin of the ulcer. With one part of the ulcer was healed, the skin was contracted in another part. Mem. Med. Trans.

that must have been noticed by every physician. I have known an inflammation & swelling of the glands in the groin brought on by an inflammation of the foot & ankle, induced by a sprain of those parts. Ulcers of the extremities, are a frequent sources. In like manner, the application of caustics, to chancres on the penis, have often induced. It is scarcely presumable, that the ~~appl~~ of this stimulating article, would so often promote the absorption of the venereal poison. These facts irresistibly prove, that the enlargement of these glands, may arise from other causes, than absorption. But exclusive, of the support, that may be drawn from analogy, this opinion quadrates very completely with experience. In speaking of Cancer, Dr Dorsey expressly says, that the enlargement of the axillary glands, in cancer of the mammæ, frequently depends upon sympathy; & in all the cases of vaccination, that I have seen, as far as my recollection extends, the violence of the affection, was proportioned to the extensiveness of the inflammation. Motion of the arm, violent exercise, warm weather, local injury &c, were the most frequent causes of it. — I will not venture to affirm, that it is never produced, by absorption, but — the circumstances I have just mentioned, have firmly convinced me, that it, in most cases, depends upon sympathy.

The above is the order, in which the symptoms usually succeed each other, when the disease is perfect; they are, however, greatly diversified, by various causes. A considerable time sometimes intervenes, between the insertion of the matter, & the appearance of the disease. Dr Valentin of Marseilles mentions one case, in which a whole year elapses. A premature inflammation, will sometimes destroy the disease in its, new, or so much change its monitis appearance, as to obscure very much its nature. Local injury, as scratching &c acts in two ways — 1st By the inflammation excited. 2 By rupturing the cuticle & affording an escape, to the virus. This circumstance, when [illegible] I have seen one part of a pustule filled with a fluid perfectly pellucid, while another portion of the same pustule contained genuine pus. This appears

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Appearance is usually ushered in by a chill, & is followed by a collection of the pustule. The inflammation has also been so intense, as to raise a number of serous vesicles, on the parts contiguous to the pustule. Is it not probable, that these vesicles, may have been mistaken, for crops of Vaccine pustules? They are obviously the effect of inflammation, & analagous in every respect, to the vesication produced by cantharides.

Causes of failure. I have frequently adverted to the causes of failure: They are numerous, & appear to arise principally.

1st From the employment of spurious matter.

2d From the use of matter, originally genuine, but impaired or rendered inert by keeping.

3d From the incisions, or punctures not penetrating deep enough. This is probably a rare occurrence; but I think I have witnessed it.

4th Penetrating too deep, whereby there is effused, that either washes away, or dilutes the matter. Probably failure arises more frequently from this than from any other source.

5th Inflammation. By this I mean an excessive inflammation. By this I mean an excessive degree, the redness attendant on vaccination, from arise too great a stimulus to excite suppuration. But it much more frequently arises, from performing this simple operation in a bungling manner, or by using a dirty or rusty lancet. Pimples, which is often confounded with vaccine, from occasional.

6th Low fever. I do not mean that the vaccine, should be free from fever, in the sense of the disease cannot be said after it, yet the number of frequently the case, that I have been in hesitation in attributing it to this cause.

7th Cutaneous diseases, which are invariably connected with other varieties, yet occasionally disappointing vaccination. In some cases, the venom of this takes place which will be more particularly hereafter. The prevalence of Herpetic affections in infancy, should induce us to pay particular attention to the skin, in these periods of life; in order to remove them, wherever practicable permanently, by means of gentle laxatives, which generally have the effect of

+ See Eclectic Repertory vol 1 p 4 et seq —

[illegible] exist the magnitude of [illegible] probable [illegible]

4th General Disease, as fever, in most cases, prevents the formation of the genuine Vaccine. This is frequently observable, in children, labouring under worms or dentitions.

5th Sulphur, has been enumerated among the causes by Dr Jenner. This may act by its peculiar determination to the skin, producing an action thus incompatible with the existence of the Vaccine. Dr Barton very seriously, & rationally, ascribes the inaptitude of persons using this article to eruptive diseases, as the Itch, & not to Sulphur, which in domestic practice, is frequently used for their removal. In confirmation of this opinion, he relates one very peculiar case.

6th Excessively warm weather diminishes the certainty, of contagion, as regards this disease, in consequence probably, of the perspiration being so abundant, at this, than at any other time; or, it may depend upon the skin, rendered by the heat, upon the surface. It was likewise asserted, that the weather being more liable to deterioration, during the summer months than in cold, or temperate seasons. Dr Rush has been unable to find that when the mercury in the Thermometer stood above 90°. The Hannatian Cow ceased to prevent Small Pox. It would doubtless exert a similar effect, from this disease, arising from the same cause.

7th Sometimes observe an inaptitude in the system to this disease, which cannot be referred, to any of the causes above enumerated. A similar insusceptibility, has been witnessed in Small Pox, & its cause, for a long time eludes discovery. It seems probable that the fœtus in utero, may imbibe the disease from its mother. Several facts might be adduced to show, that this has actually occurred. It might be even extended still farther & assumed as a fact, that the fœtus may labour under the Variolous disease, in a healthy state of the mother. Dr Jenner mentions several cases of this kind, in one, which he quotes from Dr Mead, a woman was delivered of a dead child, "all over covered with pustules, a manifest sign that it died of the disease, before it came into the world." If these cases be correctly stated, it will afford a rational solution of the difficulty, in a thousand

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Small Pox will in most cases, prevent the vaccine disease.

Perhaps other causes may conspire to render our failures more frequent. When these or any other causes have destroyed the pustule, I have deemed it prudent in every instance, to repeat the vaccination. Very little inconvenience is experienced by the patient, from this cautious procedure: if the first operation has ~~secured~~ the system, the inflammation from the second, will disappear in the 4 or 5th days. On the contrary, if the previous attempt has failed, a very important advantage is thereby gained. By this practice, many, have unquestionably, submitted to a repetition of the operation, without necessity: but when it is considered, that the life of a fellow creature, may be jeopardized, by the omission of this seemingly trifling, but really essential, precaution, I am confident, that no physician will grudge the time & trouble so laudably bestowed.

I am unacquainted with any one, infallible criterion, of the genuineness of this disease. The areola & central depression, taken conjointly are in my opinion, sufficient.

The Small pox is easily distinguished from the Vaccine disease. The principal discriminating marks are as follow. The Vaccine pustule, is divided into cells: its margin is elevated & its centre depressed: it is single & independant, papes into a scab, without much pus. The scab, is smooth, hard, semi-transparent, & of a dark brown colour. — The Variolous pock, is often surrounded with pustules that coalesce with it: it papes altogether into pus, & its scab is rough, scaly, friable, & quite opaque; with a light brown colour, & its centre somewhat elevated.

They are alike seated between the Epidermis & cutis vera.

It has been proposed to employ vaccination as a remedy, for the removal of other diseases, of a more dangerous, or disagreeable nature. As far as I know, the late Dr. Archer of Maryland, first suggested this practice. He succeeded in several cases of Hooping cough; & Dr. Rush has completely arrested the progress of the same disease, by a similar remedy. It has never, however, fallen into disrepute; probably from its having been employed

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empirically. Dr. Cullen tells us that Pertussis, continued from habit, after the inflammatory stage has been subdued. If vaccination been admissible with a view to its curative effect, would not this be the proper time to make the experiment? I should conceive it would. as the Hooping cough is a more powerful disease, than Kine Pock, I should not anticipate much risk, from making the attempt, during its first or inflammatory stage. I think the proposal very feasible; & that if properly managed, it might be productive of considerable advantage in the treatment of disease.

It occurred to me, during the last summer, that perhaps vaccination might be advantageously employed, for the removal of some local disease. I suggested to Dr. Potter of Baltimore, the propriety of using it in chancre. I have since learnt that the same idea, has occurred to a physician of Calcutta. Upon reflection, I am disposed to doubt the practicability of inducing the vaccine disease, in a venereal or cancerous sore. It may perhaps be used with advantage, in milder affections. The ring worm invariably yields to it, & it frequently compells the Itch, to succumb, under its influence — I have thus detailed all the information, I am possessed of, in regard to the Kine Pock; I am principally indebted to Dr. Smith of Baltimore for the knowledge I have acquired of it: whose extensive experience with this disease, has enabled him, to collect a number of very important facts. —